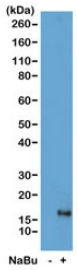
H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody [clone RM156] (R20206)

Catalog No.	Formulation	Size
R20206-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20206-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

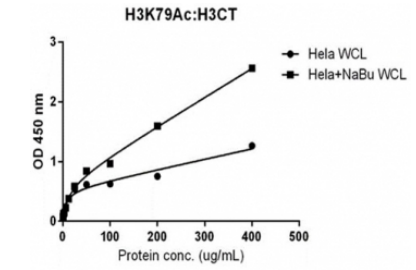
Recombinant RABBIT MONOCLONAL

Bulk quote request

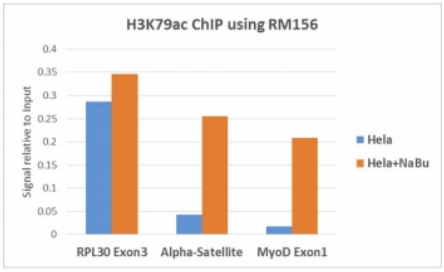
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM156
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.5-2ug/ml Immunocytochemistry : 0.5-2ug/ml ChIP : 2-10ug/mg of lysate ELISA : 0.2-1ug/ml
Limitations	This recombinant H3K79ac antibody is available for research use only.



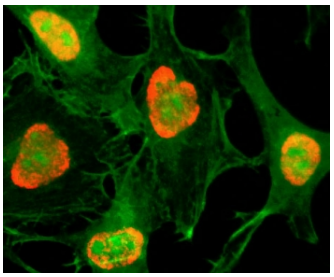
H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody (clone RM156) for WB. Western blot analysis of HIST1H3A / Histone H3 Lys79 acetylation in acid extracts of human HeLa cells untreated (-) and sodium butyrate-treated (+) using H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody. A band is detected at the predicted molecular weight of approximately 15 kDa corresponding to acetylated Histone H3, with increased signal in treated cells consistent with histone deacetylase inhibition and enhanced acetylation associated with gene body chromatin regulation and transcriptional progression.



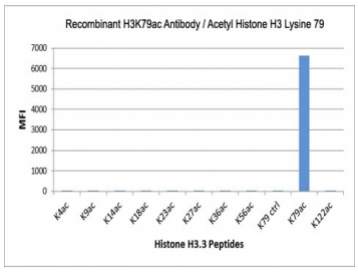
Sandwich ELISA of acetylated Histone H3 at Lys 79 using HeLa whole cell lysate, treated or untreated with sodium butyrate, with recombinant H3K79ac antibody (5 ug/ml) as the capture and biotinylated pan H3CT mAb (RM188, 1 ug/ml) as the detect.



H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody (clone RM156) for ChIP. Chromatin immunoprecipitation analysis of HIST1H3A / Histone H3 Lys79 acetylation in human HeLa cells untreated and sodium butyrate-treated using H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody (5 ug). Quantitative PCR shows increased enrichment at the actively transcribed RPL30 Exon3 locus and elevated signal at MyoD Exon1 following treatment, with lower enrichment at alpha-satellite regions, consistent with H3K79ac marking gene body chromatin associated with transcriptional progression and enhanced acetylation under histone deacetylase inhibition.



ICC testing of HeLa cells treated with sodium butyrate using recombinant H3K79ac antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).



H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody (clone RM156) specificity analysis. Peptide binding assay demonstrating selective recognition of HIST1H3A / Histone H3 Lys79 acetylation (K79ac). Strong signal is observed exclusively with the K79ac peptide, while no detectable reactivity is seen with unmodified Histone H3 or acetylation at Lys4, Lys9, Lys14, Lys18, Lys23, Lys27, Lys36, Lys56, or Lys122, confirming high specificity for the Lys79 acetylation site within the histone core domain.

Description

Histone H3 (HIST1H3A) acetylation at lysine 79 represents a distinct modification associated with gene body chromatin regulation and transcriptional progression. H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody (clone RM156) is designed to detect Histone H3 acetylated at lysine 79, providing insight into chromatin states associated with active gene regions and transcriptional maintenance. This antibody is part of a broader collection of Histone H3 antibodies used to study chromatin structure, histone modifications, and epigenetic regulation.

HIST1H3A antibody, also referred to as Histone H3 antibody and H3K79ac antibody in the literature, recognizes a modification located within the globular domain of Histone H3 rather than the N-terminal tail. This unique positioning distinguishes Lys79 acetylation from most histone acetylation sites and contributes to its distinct functional role in chromatin organization and gene regulation.

This recombinant rabbit monoclonal clone RM156 antibody is uniquely positioned for studies of gene body chromatin architecture and transcriptional progression. While H3K36ac reflects active elongation, H3K79ac is associated with maintenance of transcriptionally active chromatin states across gene bodies and may contribute to stabilization of transcriptional output.

At the molecular level, H3K79 acetylation influences nucleosome structure within the histone core and can affect chromatin compaction and accessibility in a manner distinct from tail-based modifications. This structural positioning suggests a role in maintaining chromatin environments conducive to sustained transcriptional activity.

H3K79 acetylation is functionally distinct from H3K79 methylation, which has been extensively linked to gene regulation and disease states. The acetylated form represents a dynamic and less characterized modification that adds complexity to gene body chromatin regulation.

In western blot applications, the antibody detects Histone H3 at approximately 15 kDa, with signal corresponding to acetylated chromatin within actively transcribed regions. Detection reflects transcription-associated chromatin states rather than promoter activation or enhancer regulation.

At the cellular level, H3K79 acetylation localizes to the nucleus and is enriched in euchromatic regions corresponding to active gene bodies. This distribution supports its use as a marker of transcriptional progression and chromatin organization.

This antibody supports detection of Lys79-acetylated Histone H3, enabling investigation of gene body chromatin structure, transcriptional maintenance, and epigenetic regulation of gene expression.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant H3K79ac antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An acetyl-peptide corresponding to the Acetyl-Histone H3 (Lys79) was used as the immunogen for this H3K79ac Antibody / HIST1H3A Gene Body Regulation Antibody.

Storage

Store the recombinant H3K79ac antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 Lys79 acetylation antibody, H3K79ac transcription progression antibody, histone H3 acetyl Lys79 antibody, gene body chromatin antibody